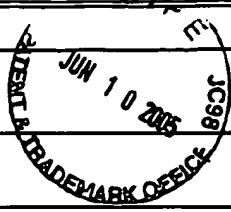
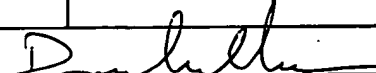
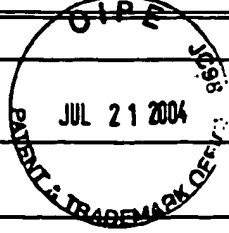
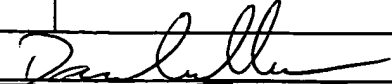


| Sheet 1 of 2 | | INFORMATION DISCLOSURE STATEMENT | | | | | | |
|---|--------------------------|--|------------------------------------|--------------------------|-------------------------------|----------|-------------------------------|---|
| FORM PTO 1449 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary) Date Submitted to PTO: June 10, 2005 | | | ATTY DOCKET NO. 2003_1522 | | SERIAL NO. 10/693,526 | | | |
| | | | APPLICANT Mitsuki OSHIMA et al. | | | | | |
| | | | FILING DATE October 27, 2003 | | GROUP 2614 2634 | | | |
| U.S. PATENT DOCUMENTS | | | | | | | | |
| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE | |
| DH | AA | 3,824,548 | 7-16-74 | Sullivan et al. | — | — | — | |
| | AB | 3,959,726 | 5-25-76 | Hinoshita et al. | — | — | — | |
| | AC | 4,303,939 | 12-1-81 | Stephens et al. | — | — | — | |
| | AD | 4,303,941 | 12-1-81 | Marti et al. | — | — | — | |
| | AE | 4,309,726 | 1-5-82 | Tanaka et al. | — | — | — | |
| | AF | 4,535,352 | 8-85 | Haskell | — | — | — | |
| | AG | 4,564,858 | 1-14-86 | Resch | — | — | — | |
| | AH | 4,581,639 | 4-8-86 | Judge | — | — | — | |
| | AI | 4,769,819 | 9-6-88 | Matsutani et al. | — | — | — | |
| | AJ | 4,794,447 | 12-27-88 | Tsinberg | — | — | — | |
| | AK | 4,800,426 | 1-24-89 | Glenn | — | — | — | |
| | AL | 4,817,192 | 3-28-89 | Phillips et al. | — | — | — | |
| | AM | 5,007,088 | 4-9-91 | Ooi et al. | — | — | — | |
| | AN | 5,029,003 | 7-91 | Jonnalagadda | — | — | — | |
| | DH | AO | 5,134,464 | 7-28-92 | Basile et al. | — | — | — |
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| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO | |
| | AP | | | | | | | |
| OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.) | | | | | | | | |
| DH | AQ | Masafumi SAITO et al., "Bit Error Rate Characteristics of OFDM in Multipath Environment", 1991 | | | | | | |
| DH | AR | Ryutaro OHMOTO et al., "π/4-shift QPSK Subcarrier Transmission", 1991 | | | | | | |
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| Sheet 2 of 2 | | INFORMATION DISCLOSURE STATEMENT | | | | | |
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| | | | FILING DATE October 27, 2003 | | GROUP 2614-2634 | | |
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| *EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE | |
| DH | AA | 5,181,112 | Citta et al. | — | — | — | |
| | AB | 5,377,051 | Lane et al. | — | — | — | |
| | AC | 5,400,084 | Scarpa | — | — | — | |
| | AD | 5,576,902 | Lane et al. | — | — | — | |
| | AE | 5,218,622 | Fazel et al. | — | — | — | |
| | AF | 5,598,220 | Citta et al. | — | — | — | |
| DH | AG | 5,802,241 | Oshima | — | — | — | |
| | AH | | | | | | |
| | AI | | | | | | |
| FOREIGN PATENT DOCUMENTS | | | | | | | |
| | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO | |
| DH | AJ | 3-48587 | Japan | — | — | abstract | |
| | AK | | | | | | |
| | AL | | | | | | |
| | AM | | | | | | |
| | AN | | | | | | |
| OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.) | | | | | | | |
| DH | AO | J. A. C. Bingham, "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come", IEEE Communications Magazine, Vol. 28, May 1990, pages 5-8 and 11-14 | | | | | |
| DH | AP | B. Hirosaki, "An Orthogonally Multiplexed QAM System Using the Discrete Fourier Transform", IEEE Transactions on Communications, Vol. Com-29, No. 7, July 1981, pages 982-989 | | | | | |
| DH | AQ | L. J. Cimini, Jr., "Analysis and Simulation of a Digital Mobile Channel Using Orthogonal Frequency Division Multiplexing", IEEE Transactions on Communications, Vol. Com-33, No. 7, July 1985, pages 665-675 and Annex | | | | | |
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| Sheet 1 of 1 | | FORM PTO 1449 (modified) | | ATTY DOCKET NO. 2003_1522 | | SERIAL NO. 10/693,526 | |  | | | |
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| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE | | | | |
| | AA | | | | | | | | | | |
| | AB | | | | | | | | | | |
| | AC | | | | | | | | | | |
| | AD | | | | | | | | | | |
| | AE | | | | | | | | | | |
| | AF | | | | | | | | | | |
| | AG | | | | | | | | | | |
| | AH | | | | | | | | | | |
| | AI | | | | | | | | | | |
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| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO | | | | |
| DH | AJ | 2-154583 | 6-13-90 | Japan | | | abstract | | | | |
| | AK | | | | | | | | | | |
| | AL | | | | | | | | | | |
| | AM | | | | | | | | | | |
| | AN | | | | | | | | | | |
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| DH | AO | Shigeki MORIYAMA et al., "Delay Propagation Characteristics at VHF and UHF bands in Urban Area", 1991 Spring National Convention Record, The Institute of Electronics, Information and Communication Engineers, Part 2, p. 406, March 15, 1991 | | | | | | | | | |
| DH | AP | Yasuhiro ITO et al., "Adaptive Weighted Code Division Multiplexing (AW-CDM) Transmission System for Terrestrial Digital Television Broadcasting", ITE Technical Report Vol. 17, No. 13, pp 27-32, February 25, 1993 | | | | | | | | | |
| | AQ | | | | | | | | | | |
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| DA | AA | 5,311,550 | 5-10-94 | Fouche et al. | _____ | _____ | _____ |
| | AB | 4,630,287 | 12-16-86 | Armstrong | _____ | _____ | _____ |
| | AC | 4,271,527 | 6-2-81 | Armstrong | _____ | _____ | _____ |
| | AD | 5,050,188 | 9-17-91 | Dirr | _____ | _____ | _____ |
| | AE | 5,398,073 | 3-14-95 | Wei | _____ | _____ | _____ |
| | AF | 5,452,015 | 9-19-95 | Hulyalkar | _____ | _____ | _____ |
| | AG | 5,565,932 | 10-15-96 | Citta et al. | _____ | _____ | _____ |
| | AH | 5,481,412 | 1-2-96 | Bannai et al. | _____ | _____ | _____ |
| DA | AI | 3,909,721 | 9-30-75 | Bussgang et al. | _____ | _____ | _____ |

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|----|----|--------------------|---------|---------|-------|----------|-----------------------|
| DA | AJ | 0365431 | 4-25-90 | EP | _____ | _____ | X |
| | AK | 0485105 | 5-13-92 | EP | _____ | _____ | X |
| | AL | 92/14343 | 8-20-92 | WO | _____ | _____ | X |
| | AM | 89/08366 | 9-8-89 | WO | _____ | _____ | X |
| DA | AN | 0031193 | 7-1-81 | EP | _____ | _____ | X |

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| DA | AO | Shinji Matsumoto et al., "200 Mb/s 16 QAM Digital Radio-Relay System Operating in 4 and 5 GHz Bands", Japan Telecommunications Review, January 1982, vol. 24, no. 1, pages 65-73. |
| DA | AP | M. Pecot et al., "Compatible Coding of Television Images, Part 2. Compatible System", Signal Processing Image Communication, October 2, 1990, no. 3, pages 259-268. |
| DA | AQ | Mitsuaki Oshima, "Constellation-Code Division Multiplex for Digital HDTV", IEEE, 1992, pages 1086-1092. |

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| DA | AA | 4,227,152 | 10-7-80 | Godard et al. | _____ | _____ | _____ |
| | AB | 4,525,846 | 6-25-85 | Bremer et al. | _____ | _____ | _____ |
| | AC | 4,751,478 | 6-14-88 | Yoshida | _____ | _____ | _____ |
| | AD | 4,891,806 | 1-2-90 | Farias et al. | _____ | _____ | _____ |
| | AE | 4,903,125 | 2-20-90 | Parker | _____ | _____ | _____ |
| | AF | 4,937,844 | 6-26-90 | Kao | _____ | _____ | _____ |
| | AG | 5,164,963 | 11-17-92 | Lawrence et al. | _____ | _____ | _____ |
| | AH | 5,555,275 | 9-1996 | Oshima | _____ | _____ | _____ |
| DA | AI | 5,565,926 | 10-15-96 | Bryan et al. | _____ | _____ | _____ |

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|----|----|--------------------|---------|---------|-------|----------|-----------------------|
| DA | AJ | 0311188 | 4-12-89 | EP | _____ | _____ | X |
| | AK | 0329158 | 8-23-89 | EP | _____ | _____ | X |
| | AL | 64-5135 | 1-10-89 | JP | _____ | _____ | X |
| | AM | 63-28145 | 2-5-88 | JP | _____ | _____ | X |
| DA | AN | 62-133842 | 6-17-87 | JP | _____ | _____ | X |

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| DA | AO | Tricia Hill et al., "A Performance Study of NLA 64-State QAM", IEEE Transactions on Communications, vol. COM-31, June 1983, no. 6, pages 821-826. |
| DA | AP | Hideki Ishio et al., "A Proposal of a Carrier Digital Transmission System Using Multi-Level APSK", pages 1-20. |
| DA | AQ | Shanmugam, "Digital and Analog Communication Systems" 1979, p. 272. |

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U.S. PATENT DOCUMENTS

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|----------------------|----|--------------------|----------|--------------------|-------|----------|-------------------------------|
| DL | AA | 5,105,442 | 4-14-92 | Wei | _____ | _____ | _____ |
| | AB | 4,048,572 | 9-13-77 | Dogliotti et al. | _____ | _____ | _____ |
| | AC | 5,282,019 | 1-25-94 | Basile et al. | _____ | _____ | _____ |
| | AD | 5,311,547 | 5-10-94 | Wei | _____ | _____ | _____ |
| | AE | 5,267,021 | 11-30-93 | Ramchandran et al. | _____ | _____ | _____ |
| | AF | 5,038,219 | 8-6-91 | Yamashita et al. | _____ | _____ | _____ |
| | AG | 5,087,975 | 2-11-92 | Citta et al. | _____ | _____ | _____ |
| | AH | 5,086,340 | 2-4-92 | Citta et al. | _____ | _____ | _____ |
| DL | AI | 5,243,629 | 9-7-93 | Wei | _____ | _____ | _____ |

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|----|----|--------------------|----------|---------|-------|----------|-----------------------|
| DL | AJ | 53-137657 | 12-1-78 | JP | _____ | _____ | X |
| | AK | 0282298 | 9-14-88 | Europe | _____ | _____ | X |
| | AL | 0392538 | 10-17-90 | Europe | _____ | _____ | X |
| | AM | 0490552 | 6-17-92 | Europe | _____ | _____ | X |
| DL | AN | 0506400 | 9-30-92 | Europe | _____ | _____ | X |

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| DL | AO | Khaled Fazel et al., Combined multilevel coding and multiresolution modulation, February 8, 1993, Pages 1081-1085 |
| DL | AP | P. Hoeher et al., Performance of an RCPC-Coded OFDM-based Digital Audio Broadcasting (DAB) System, IEEE Global Telecommunications Conference "Globecom '91", December 2-5, 1991, Vol. 1 of 3, Pages 2.1.1 - 2.1.7 |
| DL | AQ | K. M. Uz et al., Combined multiresolution source coding and modulation for digital broadcast of HDTV*, 1992, Pages 283-292 |

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| DH | AA | 5,142,353 | 8-25-92 | Kageyama et al. | _____ | _____ | _____ |
| | AB | 5,197,061 | 3-23-93 | Halbert-Lassalle et al. | _____ | _____ | _____ |
| | AC | 5,291,289 | 3-1-94 | Hulyalkar et al. | _____ | _____ | _____ |
| | AD | 5,166,924 | 11-24-92 | Moose | _____ | _____ | _____ |
| | AE | 4,940,954 | 7-10-90 | Aubert et al. | _____ | _____ | _____ |
| | AF | 5,128,758 | 7-7-92 | Azadegan et al. | _____ | _____ | _____ |
| | AG | 5,038,402 | 8-6-91 | Robbins | _____ | _____ | _____ |
| DH | AH | 5,638,112 | 6-10-97 | Bestler et al. | _____ | _____ | _____ |

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|----|----|--------------------|---------|---------|-------|----------|-----------------------|
| DH | AI | 0448492A1 | 9-25-91 | Europe | _____ | _____ | X |
| | AJ | 0485108A2 | 5-13-92 | Europe | _____ | _____ | X |
| | AK | 0525641A2 | 2-3-93 | Europe | _____ | _____ | X |
| | AL | 0540231A2 | 5-5-93 | Europe | _____ | _____ | X |
| DH | AM | 0531046A2 | 3-10-93 | Europe | _____ | _____ | X |

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| DH | AN | K. M. Uz et al., Multiresolution Source and Channel Coding for Digital Broadcast of HDTV, 1992, Pages 61-69. |
| DH | AO | Nambi Seshadri et al., Multi-Level Block Coded Modulations with Unequal Error Protection for the Rayleigh Fading Channel, Vol. 4, No. 3, May-June 1993, Pages 325-334. |
| DH | AP | William F. Schreiber, Spread-Spectrum Television Broadcasting, SMPTE Journal, August 1992, Pages 538-549. |

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| DH | AA | 5,063,445 | 11-5-91 | Nishizawa et al. | _____ | _____ | _____ |
| | AB | 5,819,000 | 10-6-98 | Oshima | _____ | _____ | _____ |
| | AC | 5,999,569 | 12-7-99 | Oshima | _____ | _____ | _____ |
| DH | AD | 5,892,879 | 4-6-99 | Oshima | _____ | _____ | _____ |

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| DH | AE | 7-99522 | 4-11-95 | Japan | _____ | _____ | abstract |
| | AF | 7-79415 | 3-20-95 | Japan | _____ | _____ | abstract |
| | AG | 5-75568 | 3-26-93 | Japan | _____ | _____ | abstract |
| | AH | 86-07223 | 12-4-86 | WO | _____ | _____ | X |
| | AI | 2 187 611 | 9-9-87 | Great Britain | _____ | _____ | X |
| | AJ | 85/04541 | 10-10-85 | WO | _____ | _____ | X |
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| | AB | 4,855,692 | 8-8-89 | Kennard et al. | _____ | _____ | _____ |
| | AC | 4,873,701 | 10-10-89 | Tretter | _____ | _____ | _____ |
| | AD | 4,958,360 | 9-18-90 | Sari | _____ | _____ | _____ |
| | AE | 5,115,453 | 5-19-92 | Calderbank et al. | _____ | _____ | _____ |
| | AF | 5,168,509 | 12-1-92 | Nakamura et al. | _____ | _____ | _____ |
| | AG | 5,561,468 | 10-96 | Bryan et al. | _____ | _____ | _____ |
| | AH | 6,049,651 | 4-11-00 | Oshima | _____ | _____ | _____ |
| DA | AI | 6,256,357 | 7-3-01 | Oshima | _____ | _____ | _____ |

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| DA | AJ | 0122805 | 10-24-84 | EP | _____ | _____ | X | |
| | AK | 63-180280 | 7-25-88 | JP | _____ | _____ | abstract | |
| | AL | 64-68144 | 3-14-89 | Japan | _____ | _____ | abstract | |
| | AM | 5-218978 | 8-27-93 | Japan | _____ | _____ | | X |
| DA | AN | 3-69295 | 3-25-91 | Japan | _____ | _____ | | X |

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NEW

10/693,526

APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
October 27, 2003

GROUP

2634

U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|----------------------|----|--------------------|---------|--------------|-------|----------|-------------------------------|
| DH | AA | 5,170,413 | 12-8-92 | Hess et al. | _____ | _____ | _____ |
| DH | AB | 5,214,656 | 5-25-93 | Chung et al. | _____ | _____ | _____ |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO |
|----|----|--------------------|----------|---------|-------|----------|-----------------------|
| DH | AC | 57-39629 | 3-4-82 | Japan | _____ | _____ | abstract |
| | AD | 58-161547 | 9-26-83 | Japan | _____ | _____ | abstract |
| | AE | 63-180222 | 7-25-88 | Japan | _____ | _____ | abstract |
| | AF | 92/22162 | 12-10-92 | WO | _____ | _____ | X |
| | AG | 2-94814 | 4-5-90 | Japan | _____ | _____ | abstract |
| | AH | 61-70861 | 4-11-86 | Japan | _____ | _____ | abstract |
| | AI | 2-218279 | 8-30-90 | Japan | _____ | _____ | abstract |
| | AJ | 2,095,435 | 5-10-92 | Canada | _____ | _____ | X |
| | AK | 91/20137 | 12-26-91 | WO | _____ | _____ | X |
| | AL | 2-141049 | 5-30-90 | Japan | _____ | _____ | X |
| | AM | 2-195732 | 8-2-90 | Japan | _____ | _____ | abstract |
| | AN | 5-167633 | 7-2-93 | Japan | _____ | _____ | abstract |
| | AO | 2-260726 | 10-23-90 | Japan | _____ | _____ | X |
| DH | AP | 58-161427 | 9-26-83 | Japan | _____ | _____ | abstract |

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

| | | |
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| | AQ | |
| | AR | |

EXAMINER

DATE CONSIDERED

09/20/05